

REMARKS

Claims 3 and 13 have been canceled without prejudice or disclaimer. Claims 23-32 have been added. Claims 1-2, 4-12, and 14-22 have been amended. Claims 1-2, 4-12, and 14-32 are now pending.

No new matter has been inserted. Support for amendments and new claims can be found in both the original claims as filed as well as throughout the specification. Particular support can be found in the specification at least at pages 10-12.

Claim Objections:

Claims 1-22 were objected to because of various minor informalities. In response, claims 3 and 13 have been canceled and claims 1-2, 4-12, and 14-22 have been amended obviating the objections.

35 U.S.C. §112, second paragraph

Claims 1-22 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. Applicants respectfully traverse this rejection.

While not conceding the correctness of the Examiner's positions, in the interest of advancing prosecution, Applicants have canceled claims 3 and 13 and amended claims 1-2, 4-12, and 14-22. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. §112, first paragraph

Claims 1-22 were rejected under 35 U.S.C. §112, first paragraph, as lacking an adequate written description. Applicants respectfully traverse this rejection.

Specifically, the Examiner has cited the breadth of the claims as encompassing nucleotide sequences of all group I viruses, and nucleotide sequences that have at least 70 or 80% homology to any TGB2-encoding nucleotide sequence of any group I virus.

In the interest of advancing prosecution, Applicants have amended the claims. As amended, claims 1-12, and 14-22 no longer recite all group I viruses and now include specific SEQ ID numbers. Accordingly, Applicants assert that sufficient written description has been provided for the claimed subject matter. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. §112, first paragraph

Claims 1-22 were rejected under 35 U.S.C. §112, first paragraph, as not enabled. Applicants respectfully traverse this rejection.

Specifically, the Examiner alleges a lack of enablement based on breadth of the claims, unpredictability of the art, and a lack of guidance in the specification.

In the interest of advancing prosecution, Applicants have amended the claims. As amended, claims 1-12, and 14-22 no longer recite all group I viruses and now include specific SEQ ID numbers. In view of the narrowed scope of the claims, Applicants assert that the claims as drafted are fully enabled. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. §103(a) Beck “94”, Saito, Bouzoubaa, Beck “91”, Hall, Urwin, and Landsman

Claims 1-19, and 21-22 were rejected under 35 U.S.C. §103(a) as obvious over Beck et al. “94” (Proc. Natl. Acad. Sci., 1994, 91:10310-10314) in combination with Saito et al. (Arch. Virol., 1996, 141:2163-2175), Bouzoubaa et al. (J. Gen. Virol., 1986, 67:1689-1700), Beck et al. “91” (Virology, 1991, 183:695-702), Hall et al. (WO 95/10178), Urwin et al. (Plant J., 1995, 8:121-131), and Landsman et al. (Mol. Gen. Genet., 1988, 214:68-73). Applicants respectfully traverse this rejection.

An obviousness rejection requires a reasonable expectation of success. See MPEP § 2143.02. Applicants submit that a reasonable expectation of success is lacking in the combination of seven references cited by the Examiner.

To begin, the Examiner concedes that Beck “94” does not teach transgenic sugar beet plants, the CaMV 35S promoter, nucleotide sequences having at least 70% homology with the nucleotide sequences of a TGB2 of a group I virus, and the par promoter from *Perosponia andersonii*. Applicants further assert that this reference provides no reasonable expectation of success as applied to BNYVV as required by the claims. Beck “94” provides no teaching regarding BNYVV. Further, as acknowledged by the Examiner, the relevant art is unpredictable. Therefore, one of skill in the art would not be enabled by the teachings of Beck “94”. Saito et al., Bouzoubaa et al., Beck “91”, Hall et al., Urwin et al., and Landsman et al. do not cure the deficiencies of Beck “94”.

Saito does provide the RNA of the Japanese isolate S of BNYVV. However, this teaching of the RNA sequence does nothing to provide one of skill in the art with a reasonable expectation of success in practicing the invention as claimed. Specifically, Saito discloses nothing about the operability of a method for making a plant resistant to BNYVV through expression of a mutant TGB2 protein. Therefore, Saito does not provide the reasonable expectation of success that is required. The exact same argument also applies to Bouzoubaa et al., cited by the Examiner as teaching the RNA sequence of BNYVV isolate F13.

While Beck “91” teaches a mutated TGB2 sequence, this is only in the context of white clover mosaic virus. Further, in Beck “91”, plants and protoplasts are inoculated (not transformed) with RNA to determine whether the RNA can infect the plant. Accordingly, Beck “91” is a study of the gene’s activity and is not a disclosure of a transgenic plant. Therefore, Beck “91” also does not provide the reasonable expectation of success that is required.

Hall et al. (WO 95/10178) does teach the transformation of sugar beets to confer herbicidal resistance. However, Hall provides no teaching that would motivate one of skill in the art to mutate SEQ ID NO:1 specifically and to introduce this mutated sequence into a plant such as a sugar beet plant so that the encoded mutated protein would be capable of providing resistance against rhizomania. Therefore, Hall also does not provide the reasonable expectation of success that is required.

The Examiner cites Urwin as disclosing the use of the CaMV 35S promoter. However, Urwin only discloses the use of the CaMV 35S promoter in conjunction with tomato plants (see p. 125) and provides no enablement as to the use of the CaMV 35S promoter as applied to sugar beets and, more specifically, in the context of a method for making a sugar beet resistant to BNYVV through expression of a mutant TGB2 protein.

In sum, the combination of references cited by the Examiner does not provide one of skill in the art with a reasonable expectation of success in practicing the invention as required by MPEP § 2143.02. Therefore, the combination of Beck “94”, Saito, Bouzoubaa, Beck “91”, Hall, Urwin, and Landsman does not render claims 1-2, 4-12, and 14-22 obvious. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. §103(a) Baulcombe, Saito, Bouzoubaa, Hall, Urwin, and Landsman

Claims 1-22 were rejected under 35 U.S.C. §103(a) as obvious over Baulcombe (Plant Cell, 1996, 8:1833-1844), in combination with Saito et al. (Arch. Virol., 1996, 141:2163-2175), Bouzoubaa et al. (J. Gen. Virol., 1986, 67:1689-1700), Hall et al. (WO 95/10178), Urwin et al. (Plant J., 1995, 8:121-131), and Landsman et al. (Mol. Gen. Genet., 1988, 214:68-73).

Applicants respectfully traverse this rejection.

Baulcombe teaches general principals of gene-silencing and pathogen-derived resistance. However, Baulcombe contains no particular teaching or suggestion that would motivate one of ordinary skill in the art to prepare a mutant TGB2 sequence such as SEQ ID NO:3 and to use it to transform plants and make them resistant to BYNVV. Accordingly, Baulcombe does not provide one of skill in the art with a reasonable expectation of success in practicing the invention as claimed. Saito et al., Bouzoubaa et al., Hall et al., Urwin et al., and Landsman et al. do not cure the deficiencies of Baulcombe.

As discussed above, neither Saito, Bouzoubaa, Hall, Urwin, nor Landsman provide the required reasonable expectation of success. Therefore, the combination of Baulcombe, Saito, Bouzoubaa, Hall, Urwin, and Landsman does not render claims 1-2, 4-12, and 14-22 obvious. Applicants respectfully request that this rejection be withdrawn.

Summary

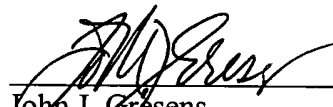
In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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9/24/03



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